

Remarks

The amendment to claims 1, 3, 5-7, 9 and 10 is supported by the original figure 3, and the specification at page 3, line 1-11 and the paragraph bridging pages 21 and 22. Applicants have amended claims 1, 3, 5-7, 9 and 10 in an effort to remove any arguable ambiguity regarding the previous use of the word "on" in reference to the trench wall being on the function layer. Applicants submit that the amendment does not add any new matter to the disclosure.

Regarding the rejection of claim 7 under 35 USC 112, first paragraph, applicants submit that this claim is supported by the disclosure of Figure 6 and the discussion thereof starting at page 23, line 20 of the original specification where additional function layers 16b and 16c are introduced in the trench spaces over function layer 16. On this basis, applicants submit that the claim is adequately described in the original application in compliance with 35 USC 112, first paragraph.

The invention centers on a novel electroluminescent device and method for creating it. The device (of claim 1) is characterized by presence of trench walls 22 on the function layer 16 (see specification page 3, lines 1-11, especially lines 9-11) and by dopant concentration in the function layer which is less in the region below (18c in Figure 3(c)) the trench walls (see specification page 3, at the 5th line from the bottom of the page and on page 22, the paragraph beginning, line 11). The method (of claim 5) is characterized by the formation of trenches on a function layer (see page 21, paragraph starting 9 lines from the bottom as well as figures 3(a) - 3(c)) and by doping the function layer by providing a dopant solution along the trenches (see: page 3, lines 9-14; page 15, last paragraph; on page 22, the paragraph beginning, line 11). The result is a device that can have a high definition color pattern and economical method for producing it.

Yu et al. discloses the formation of a substrate (10) with walls (30) in contact with the substrate. Yu et al. does not disclose or suggest the presence or formation of a trench wall structure on the function layer, nor the regions of function layer material directly underneath the wall which have reduced dopant concentration compared to the other portions of the function layer. Applicants submit that the amendment clarifies the presently claimed geometry such that there can be no interpretation that the claimed structure exists in Yu et al.

Akai (JP 2001-210469) discloses a process for making an organic LED where a tapered septum is adhered to the organic layer and then an electrode is deposited in spaces defined by the septum where the upper portion of the taper acts as a shadow mask. Akai does not disclose or suggest doping of a function layer by supplying dopant solution along a trench wall. The teaching of Yu et al. is to form trench walls on the first electrode and then form a function layer in between the walls by ink jetting of a dopant solution. The office action proposes that it would be obvious to use the dopant solution technique of Yu et al. in Akai to arrive at the presently claimed process.

Applicants submit that it is not apparent that the septum of Akai as adhered to the organic layer of Akai would be sufficiently impervious to liquid such as to result containment of the liquid with the formation of reduced dopant. The illustrations of Akai imply that the function of the septum is as a deposition mask where the upper portion of the septum defines the shape of the deposited electrode. There is no concept in Akai of using the walls to define a lateral boundary to contain a liquid dopant. Yu et al. is cited to show a liquid dopant technique. Applicants note that the geometries of the walls of Akai and Yu et al. are substantially different. Thus, it is not apparent that there would be any reasonable probability of success in producing a functional organic LED by using

liquid doping of Yu et al. in the structure of Akai since bleeding through the attached septum at the attachment point would be expected.

For the above reasons, applicants submit that the claims are patentable over the prior art of record and that the application is in condition for allowance. Such allowance is earnestly and respectfully solicited.

Respectfully submitted,
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